

Patent Claims

1. Device for conversion of a rotational movement into a movement of a working lever (3, 4; 203, 204; 303, 304; 503, 504; 603, 604) defining a truncated cone or a cylinder and a self-rotating movement of the working lever (3, 4; 203, 204; 303, 304; 503, 504; 603, 604), or vice versa a movement of a working lever (3, 4; 103, 104; 203, 204; 303, 304; 503, 504; 603, 604) defining a truncated cone or a cylinder and a self-rotating movement of the working lever (3, 4; 103, 104; 203, 204; 303, 304; 503, 504; 603, 604) into a rotational movement, with a lever bearing element (2; 502; 602) which is rotatable around a rotation axis (C; C') and in which the working lever (3, 4; 103, 104; 203, 204; 303, 304; 503, 504; 603, 604) is self-rotatably positioned around a self-rotation axis (A, B; A', B'), characterised in that around the rotation axis (C; C') a sun wheel (7; 107, 108; 407; 507; 607) is arranged which is able to be blocked from turning, with which a planetary wheel (5, 6; 105, 106; 402, 404; 505, 506; 605, 606), arranged in a non-rotatable manner on the working lever (3, 4; 103, 104; 203, 204; 303, 304; 503, 504; 603, 604), is coupled via a transmission means (50, 55; 150, 155; 450; 455; 550, 555; 650, 655), such that with a rotation of the lever bearing element (2; 502; 602) around the rotation axis (C; C'), on the one hand, due to the positioning in the lever bearing element (2; 502; 602), the working lever (3, 4; 103, 104; 203, 204; 303, 304; 503, 504; 603, 604) carries out a rotation in the same direction of rotation and, on the other hand, due to the planetary wheel (5, 6; 105, 106; 402, 404; 505, 506; 605, 606) which is coupled to the sun wheel (7; 107, 108; 407; 507; 607) via the

transmission means (50, 55; 150, 155; 450; 455; 550, 555;
650, 655), the working lever (3, 4; 103, 104; 203, 204; 303,
304; 503, 504; 603, 604) carries out a self-rotation around
the self-rotation axis (A, B; A', B') in the opposite
5 direction of rotation.

2. Device according to claim 1, characterised in that
a rotation-transmission ratio exists between planetary wheel
(5, 6; 105, 106; 402, 404; 505, 506; 605, 606) and sun wheel
10 (7; 107, 108; 407; 507; 607), such that with a rotation of
the lever bearing element (2; 502; 602) around 360°, the
working lever (3, 4; 103, 104; 203, 204; 303, 304; 503, 504;
603, 604) self-rotates around less than 360°.

15 3. Device according to claim 2, characterised in that
a rotation-transmission ratio of 2:1 exists between planetary
wheel (5, 6; 105, 106; 402, 404; 505; 606) and sun wheel (7;
107, 108; 407; 507; 607).

20 4. Device according to any one of claims 1 to 3,
characterised in that it has means (11, 12, 13, 14; 111, 112,
113, 114, 121, 122) with which the sun wheel (7; 107, 108;
407; 507; 607) is rotationally adjustable and which, except
when rotationally adjusting, block the sun wheel from
25 turning.

5. Device according to claim 4, characterised in that
these means comprise a chain wheel (11; 111, 112) connected
with the sun wheel (7; 107, 108; 407; 507; 607), a further,
30 rotationally adjustable chain wheel (13; 113, 114) and a
chain (12; 121, 122) connecting the two chain wheels (11, 13;
111, 112, 113, 114).

6. Device according to any one of claims 1 to 5,
characterised in that the planetary wheel (5, 6; 105, 106;
505, 506; 605, 606), the transmission means (50, 55; 150,
5 155; 550, 555; 650, 655) and the sun wheel (7; 107, 108; 507;
607) are toothed wheels.

7. Device according to any one of claims 1 to 5,
characterised in that the planetary wheel (402, 404) and the
10 sun wheel (407) are chain wheels and the transmission means
is a roller chain (450, 455) connecting the chain wheels.

8. Device according to any one of claims 1 to 5,
characterised in that the transmission means is a belt or a
15 toothless wheel.

9. Device according to any one of claims 1 to 8,
characterised in that it comprises at least two working
levers (3, 4; 103, 104; 203, 204; 303, 304; 503, 504; 603,
20 604) each with a planetary wheel (5, 6; 402, 404; 505, 506;
605, 606), the planetary wheels (5, 6; 402, 404; 505, 506;
605, 606) being coupled with the sun wheel (7; 407; 507; 607)
via transmission means (50, 55; 450; 455; 550, 555; 650,
655).

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10. Device according to any one of claims 1 to 9,
characterised in that it comprises at least two working
levers each with a planetary wheel (105, 106), each planetary
wheel (105, 106) being coupled via a transmission means (150,
30 155) with a separate sun wheel (107, 108) arranged around the
rotation axis (C).

11. Device according to any one of claims 1 to 10,
characterised in that the lever bearing element (2) is
pivotably arranged in a casing (1, 10) and is connected with
a shaft (9) which is arranged on the rotation axis (C) and
5 which projects out of the casing (1, 10).

12. Device according to any one of claims 1 to 11,
characterised in that the lever bearing element (2; 502; 602)
is connected with a motor for production of the rotational
10 movement, and an operating tool, in particular a paddle (31,
41; 31', 41'; 531, 541; 631, 641) a vane (131, 141), or a
wing blade (231, 241) is arranged on the at least one working
lever (3, 4; 103, 104; 203, 204; 303, 304; 503, 504; 603,
604).

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13. Device according to any one of claims 1 to 11,
characterised in that a torque consumer is connected with the
lever bearing element (2; 502; 602), in particular a current
generator.

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14. Use of at least one device according to any one of
claims 1 to 12 as driving apparatus and/or steering of a
locomotion means in water or in air, for production of a
water or gas current or for mixing of flowable materials.

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15. Use of a device according to claim 13 for current
production through conversion of a movement produced through
flowing water or wind of a working lever (3, 4; 103, 104;
203, 204; 303, 304; 503, 504; 603, 604) defining a truncated
30 cone or a cylinder, and conversion of a self-rotating
movement produced through flowing water or wind of the
working lever (3, 4; 103, 104; 203, 204; 303, 304; 503, 504;

603, 604), into a rotational movement, with which a current generator is operated, the working lever (3, 4; 103, 104; 203, 204; 303, 304; 503, 504; 603, 604) having an operating tool (31, 41; 31', 41'; 131, 141; 231, 241; 531, 541; 631, 5 641).